FOCUS

ON

METROPOLITAN PHOENIX

HOUSING APPRECIATION

1981-1987

ARIZONA REAL ESTATE CENTER

COLLEGE OF BUSINESS

ARIZONA STATE UNIVERSITY

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Focus on Arizona Real Estate

This study represents a continuing series in which the Arizona Real Estate Center will examine specific aspects of the Arizona real estate market. In future months, research will be conducted concerning housing affordability, the characteristics of the non-metropolitan housing market and other topics of interest to the Arizona real estate industry. For additional information, please contact:

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Methodology

The appreciation measure presented in this report is calculated from home sales recorded with the Maricopa County Recorder's Office between 1981 and 1987. This information has been collected by the Arizona Real Estate Center in the College of Business, Arizona State University, from data supplied by Marketron Services, Inc., Phoenix, Arizona.

Even though real estate recordings may contain mistakes or other inaccurate information, they represent the most comprehensive and unbiased source of sales transactions. The use of recordings presents various problems: inaccurate information is not uncommon; newly built homes are not specifically indicated; transactions other than sales, such as a non-monetary transfer or a correction of an earlier recording, must be eliminated. Further, identification of specific units is frequently lacking for condominiums that share the same street address.

The appreciation study tracks the sales history of individual properties, by specific address, over time. The database consists of each property that sold more than once between 1981 and 1987 which passed the screening criteria imposed due to the problems inherent in the recordings.

The screening process consists of many steps. A transaction is eliminated if it is an exact duplicate of a previous recording, a duplicate in all respects except price, or if the price is less than $10,000, since these transactions are typically re-recordings or errors. Properties recorded four or more times between 1981 and 1987 have been deleted, with the assumption that they have either been re-recorded or that they are not true market transactions. Sales recorded within three months of a prior sale have been deleted with the assumption that they may be either re-recordings or "fix-up" investment purchases, rather than market transactions. Finally, if a property appreciated or depreciated more than 24 percent per year, it has been eliminated in a further attempt to delete mistakes and non-market transactions.

The appreciation rate for single-family homes was first calculated during 1984 for the period from 1981 to 1983, and has been reported both quarterly and annually since then. The townhouse/condominium rate was first measured for 1984; less history is provided due to the smaller number of sales, and the resulting smaller database.

The median (mid-point) appreciation rate is reported throughout this study. Use of the median rather than the mean (average) is preferred because the mean can be heavily skewed by a few extreme values.

Introduction

Home appreciation in the Phoenix area decelerated sharply during 1981 and 1982 from the high rates of appreciation that had characterized the late 1970s. The appreciation rate for single-family homes has been relatively stable since late 1982. However, a slight downward trend, extending through 1987, is evident.

The median appreciation rate for single-family homes declined to approximately 2.4 percent in 1984, falling slightly from 2.8 percent in both 1985 and 1986. Townhouses/condominiums did not appreciate during 1987; their rate was 0.0 percent, down from 0.7 percent in 1986 and 1.3 percent in 1985.

The continued slowing of the appreciation rate is partially explained by continued relatively low inflation rates. Gradually, the termination of the inflationary environment of the 1970s and early 1980s has been recognized, with the substitution of more moderate inflationary expectations.

In addition, the nature of the appreciation measure causes it to react slowly to changes in inflation rates. For example, even if inflation in home prices were to sharply accelerate during 1988, the appreciation rate would measure much less acceleration. A home sold at the end of 1988 that previously had sold at the end of 1981 would have experienced only one year of higher inflation and six years of relatively low inflation. The overall rate of appreciation on the home would not be great between 1981 and 1988.

Appreciation is also highly affected by demand and supply conditions in the housing market. In the late 1970s, when appreciation rates surged to levels higher than inflation rates, housing supply did not keep pace with the increased demand.

Many households had increased buying power, due at least partially to the further addition of women in the marketplace and the lender's acceptance of dual incomes when applying for mortgage loans. The additional buying power increased demand for housing. Material shortages, combined with the increased demand, created long waits for new homes, as well as higher prices. The increased demand, combined with the new home wait, resulted in upward pressure on resale homes as well, increasing price levels and therefore appreciation rates for both housing types.

Several factors have contributed to the current situation in which appreciation rates are lower than the inflation rate. Higher home prices in the late 1970s and early 1980s drove affordability down, reducing demand, so prices were restricted from accelerating as fast as they had been. The supply of and demand for housing became more stabilized, reducing the upward pressure on price. Many investors dropped out of the market, at least temporarily, waiting for higher appreciation and inflation to increase their investment potential. The combination of these factors has returned home ownership primarily to its pre-1970s status as a "place to live" rather than as an investment.

The pattern of appreciation of townhouses/condominiums was different from that of single-family homes. In early 1984, the appreciation rate of townhouses/condominiums was not that much lower than the single-family rate, but by 1987 appreciation of townhouses/condominiums had dropped to zero. The townhouse/condominium market slumped badly, particularly during 1985, with a decline in the number of sales as well as in the median sales price per-square-foot.

Obviously, not all homes appreciate at the same rate. A home's value is partially controlled by the owner, through maintenance, repair and improvement. Not controllable by the homeowner are determinants of appreciation that are a function of the entire market, such as home price.

Some homes inevitably decline in value, for a number of reasons. Many factors may contribute to a loss in price from one sale to the next, such as foreclosure sales; selling the home under "emergency" conditions, such as death, divorce or financial difficulties; originally purchasing the home for a price greater than the home's value; neighborhood deterioration or home deterioration.

Of all the 30,336 single-family homes selling more than once between 1981 and 1987 used in calculating the appreciation rate, sales prices increased on 75 percent; 21 percent declined. In contrast, only 57 percent of the 2,724 townhouses/condominiums that were used to calculate the appreciation rate from 1981-87 increased in price; 39 percent lost value. Only 48 percent of townhouses sold in 1987 appreciated.

Comparison to Other Measures of Inflation

Between 1983 and 1987, the appreciation rate did not keep up with the rate of inflation rate in consumer prices (see Table 1). In a stable environment, the two measures should be approximately equal over a period of a few years, though the appreciation rate would be expected to slightly lag changes in the general inflation rate.

While the median sales price of homes sold increased more rapidly than the appreciation and inflation rates between 1983 and 1987, most of the difference resulted from the increasing size of the typical home sold. For example, the median sales price per-square-foot of existing single-family homes rose slightly less than the inflation rate and slightly more than the appreciation rate of existing single-family homes.

The overall inflation rate is only an indication of the expected future trend in appreciation. Housing prices are themselves a component of inflation, thereby facilitating its movement, while other items included in the inflation rate have less than full impact on appreciation. For example, the 1.4 percent inflation rate in 1986 was considerably lower than the long-term average rate, due to dramatic declines in oil prices. However, only a portion of the drop in the inflation rate would be expected to show up in appreciation rates.

TABLE 1
INFLATION MEASURES
Percent Change Per Year*

	1983	1984	1985	1986	1987	1983-1987 Total*
Metropolitan Phoenix Consumer Price Index	1.6	5.8	5.0	1.3	4.1	19.0
U.S. Consumer Price Index	3.2	4.3	3.6	1.9	3.7	17.8
Phoenix Area						
All single-family homes:						
Appreciation rate	3.6	3.2	2.9	2.8	2.5	15.9
Median sales price	4.8	6.3	4.0	6.0	4.8	28.7
New single-family homes:						
Appreciation rate	5.7	4.7	4.8	4.2	3.7	25.3
Median sales price	6.0	9.9	8.1	7.4	7.2	45.0
Existing single-family homes:						
Appreciation rate	2.9	2.7	2.6	2.4	2.1	13.4
Median sales price	4.6	4.8	3.2	6.1	4.5	25.4
Median sales price per-square-foot	2.9	3.0	2.2	3.5	2.4	14.8
All townhouses and condominiums:						
Appreciation rate	NA	NA	1.3	0.7	0.1	NA
Median sales price	1.8	8.8	1.0	3.5	-2.1	13.4
Existing townhouses and condominiums:						
Appreciation rate	NA	NA	1.5	1.1	0.2	NA
Median sales price	2.9	3.3	-1.6	3.1	-0.6	7.2
Median sales price per-square-foot	3.3	2.5	-1.4	4.3	7.4	16.0

*Calculated at a quarterly compound rate. Appreciation rates in this table may differ slightly from those in the rest of the report due to the different method of compounding.

NA: Not available due to insufficient number of sales

Source: Arizona Real Estate Center, College of Business, Arizona State University. U.S. Consumer Price Index is from the U.S. Department of Labor, Bureau of Labor Statistics.

By Quarter of First Sale

During much of 1981-87, the rate of appreciation for single-family homes was relatively stable near 0.7 percent per quarter, regardless of when the home first sold during this period. Two exceptions, however, are obvious from Table 2:

- Homes that first sold during the 1981-82 recession had the lowest appreciation rates.
- The highest appreciation rate occurred for homes first sold in mid-1986. In this case, the time of the first sale is not significant. Instead, the correlation is with the elapsed time between sales (see page 10).

Little pattern exists in appreciation of townhouses/condominiums. The second half of the time period is not available because of the relatively few number of properties that sold more than once within one-to-two years.

TABLE 2
MEDIAN RATE OF METRO PHOENIX HOME APPRECIATION
By Quarter of First Sale[1]
Percent Change Per Year

		Single-family	Townhouse/ Condominium			Single-family	Townhouse/ Condominium
1981	I	3.0%	1.6%	1985	I	2.8%	*
	II	2.5	0.3		II	3.0	*
	III	2.3	0.6		III	3.6	*
	IV	2.2	1.2		IV	3.9	*
1982	I	2.2	1.7	1986	I	3.3	*
	II	2.0	0.9		II	4.4	*
	III	2.4	1.0		III	4.1	*
	IV	3.0	1.2		IV	4.1	*
1983	I	3.4	1.2	1987	I	3.4	*
	II	3.0	0.8		II	*	*
	III	2.9	0.2		III	*	*
	IV	2.9	0.4		IV	*	*
1984	I	2.8	0.0		TOTAL	2.8	0.9
	II	2.4	0.0				
	III	2.9	0.0				
	IV	2.7	0.7				

[1]As an example, if a property sold in 1981, 1984 and 1987, the appreciation rate on the period from 1981 to 1987 is shown in 1981.

*Insufficient number of sales.

Source: Arizona Real Estate Center, College of Business, Arizona State University.

By Quarter of Subsequent Sale

The appreciation rate for single-family homes has been nearly stable since its sharp deceleration during 1981 and 1982 from the high rates in the late 1970s. However, a slight downward trend is evident (see Table 3).

Townhouses and condominiums followed the same downward trend, but the decrease was more dramatic than for single-family homes. Between 1984 and 1987, appreciation rates for single-family homes decreased slightly from 3.1 percent to 2.4 percent per year. Townhouse rates fell from 2.4 percent per year to zero.

TABLE 3
MEDIAN RATE OF METRO PHOENIX HOME APPRECIATION
By Quarter of Subsequent Sale[1]
Percent Change Per Year

		Single-family	Townhouse/ Condominium
1981	IV	6.0%	*
1982	I	4.8	*
	II	4.0	*
	III	4.8	*
	IV	3.2	*
1983	I	3.6	*
	II	3.2	*
	III	3.2	*
	IV	3.2	*
1984	I	3.2	2.4
	II	3.2	2.4
	III	3.2	1.6
	IV	2.8	1.6
1985	I	2.8%	1.2%
	II	2.9	1.1
	III	3.0	0.6
	IV	2.7	0.8
1986	I	2.6	0.7
	II	2.7	0.8
	III	2.8	0.2
	IV	2.4	0.3
1987	I	2.4	0.2
	II	2.6	0.0
	III	2.6	0.0
	IV	2.2	-0.3
	TOTAL	2.8	0.8

[1]As an example, if a home sold in the fourth quarters of 1981, 1984 and 1987, the appreciation rate from 1981-1984 is shown in fourth quarter 1984, and the rate for 1981-1987 is shown in fourth quarter 1987.

*Insufficient number of sales.

Source: Arizona Real Estate Center, College of Business, Arizona State University.

By Number of Elapsed Quarters Between Sales

Single-family homes recorded the highest rate of appreciation per quarter when the property was resold approximately three-to-five quarters later (see Table 4). Rates were more erratic for townhouses/condominiums, but properties held for shorter periods of time had the highest appreciation rates. The explanation for this phenomenon is probably similar to the reasons for new homes apparently appreciating more rapidly than existing homes (see page 15). After the purchase, repair and improvement work is frequently performed on a resale home, raising its value. The gain in value is a one-time phenomenon, however, and may merely represent recovery of the cost of the repairs/ improvements.

Because of the one-time nature of the increase in value, its impact dissipates over time when measured by a rate per quarter. Thus, the greater the number of elapsed quarters between sales, the lower the appreciation rate per quarter, especially for townhouses/condominiums.

TABLE 4
MEDIAN RATE OF METRO PHOENIX HOME APPRECIATION
By Number of Elapsed Quarters Between Sales[1]
Percent Change Per Year, 1981-87

Number of Quarters	Single-family	Townhouse/ Condominium	Number of Quarters	Single-family	Townhouse/ Condominium
2	1.2%[1]	3.0%	15	2.6%	0.0
3	4.1	2.3	16	2.4	0.0
4	4.6	3.8	17	2.2	0.3
5	4.0	2.0	18	2.3	0.5
6	3.8	2.9	19	2.4	*
7	3.6	1.6	20	2.4	*
8	3.2	1.4	21	1.9	*
9	3.2	1.4	22	2.2	*
10	2.8	0.3	23	2.0	*
11	2.7	0.9	24	2.2	*
12	2.6	0.8	25	2.0	*
13	2.5	1.2	26	2.2	*
14	2.6	-0.4	27	1.7	*
			TOTAL	2.8	0.8

[1]The mean rate, 3.1 percent, was sharply higher than the median, indicating wide dispersion in the increase in price during such a short span of time.

*Insufficient number of sales.

Source: Arizona Real Estate Center, College of Business, Arizona State University.

By Price Range

The strongest influence on the rate of appreciation is home price. Both new and resale single-family homes that sold for more than $100,000 appreciated more than twice as fast as homes that sold for less than $60,000 (see Tables 5 and 6). Resale single-family homes priced less than $40,000 experienced no appreciation. Townhouses/condominiums selling for more than $60,000 appreciated at approximately 1.5 to 2.0 per year percent, less than the comparable rate for single-family homes. Townhomes selling for less than $50,000 either remained constant in value or depreciated.

The wide differential in the appreciation rates of townhouses/condominiums and single-family homes is partially explained by lower townhouse/condominium prices. Other factors, however, such as relatively low demand for townhomes, more fully explain the difference.

The positive relationship between appreciation and price holds after adjusting the sales price for home size. From 1981-87, single-family homes that sold for more than the median price per-square-foot amount of $54 appreciated 4.0 percent per year, compared to a rate of 2.4 percent per year for less expensive homes.

A closer look at the relationship between single-family home prices and appreciation reveals that new homes priced between $110,000 and $120,000 had the peak rate of appreciation. For resale homes, the appreciation rate stabilized at just under 4.0 percent per year for homes that sold for more than $100,000.

TABLE 5
MEDIAN RATE OF METRO PHOENIX HOME APPRECIATION
By Price Range
Percent Change Per Year, 1981-87

	Single-family			Townhouse/Condominium
	Total	New	Resale	Total
Less than $40,000	0.0%	*	0.0%	-3.1%
$40,000 - 49,999	1.1	2.1	1.0	-0.4
$50,000 - 59,999	2.0	1.9	2.1	0.1
$60,000 - 69,999	2.3	2.5	2.2	1.2
$70,000 - 79,999	2.7	3.4	2.6	2.1
$80,000 - 89,999	3.0	4.1	2.7	1.7
$90,000 - 99,999	3.2	4.3	2.8	1.6
$100,000 - 109,999	4.0	5.7	3.4	*
$110,000 - 119,999	4.4	6.2	3.8	*
$120,000 - 149,999	3.9	5.2	3.5	2.1
$150,000 or more	3.9	5.5	3.8	2.4
TOTAL	2.8	3.9	2.3	0.9

*Insufficient numbers of sales.

Source: Arizona Real Estate Center, College of Business, Arizona State University.

TABLE 6
MEDIAN RATE OF METRO PHOENIX HOME APPRECIATION
By Quarter of Subsequent Sale and Price Range[1]
Percent Change Per Year, Single-family Only, 1981-87

		Less Than $60,000	$60,000 to $99,999	$100,000 or more
1982	I	*	*	*
	II	*	3.2	*
	III	*	5.8	*
	IV	1.4	3.9	*
1983	I	1.8	3.6	*
	II	0.0	3.5	5.8
	III	1.6	3.4	5.6
	IV	1.7	3.5	4.5
1984	I	1.8	3.4	3.8
	II	2.6	3.2	3.9
	III	2.3	3.3	5.1
	IV	1.6	3.0	5.0
1985	I	1.7	2.8	5.4
	II	1.6	2.8	5.1
	III	1.6	2.8	4.7
	IV	1.2	2.7	4.4
1986	I	1.3	2.8	3.7
	II	2.0	2.7	3.4
	III	1.6	2.8	3.7
	IV	1.2	2.4	3.8
1987	I	1.4	2.4	3.6
	II	1.0	2.6	3.8
	III	1.3	2.3	3.8
	IV	0.4	2.2	3.5
TOTAL		1.6	2.7	4.0

[1]As an example, if a home sold in the fourth quarters of 1981, 1984 and 1987, the rate between 1981-1984 is shown in fourth quarter 1984, and the rate for 1981-1987 is shown in fourth quarter 1987, each in the price range of the second sale.

*Insufficient number of sales.

Source: Arizona Real Estate Center, College of Business, Arizona State University.

New vs. Resale Homes

New homes, defined as those originally built and later resold between 1981 and 1987, appreciated significantly faster than resale homes (see Table 7). This relationship applied to both single-family homes and townhouses/condominiums, for all time periods and all price ranges (see Table 8).

The more rapid appreciation of new homes is largely illusory, however. The higher rate - nearly double that of resale homes - lasted only until the first resale of the home. At least a portion of the gain reflects additional expenses that most buyers of new homes incur in making improvements, such as landscaping, which add to the value of the property. Further, new homes generally are more expensive than resale homes, even on a price-per-square-foot basis. Thus, new homes appreciate faster mainly because of improvements and significantly higher prices.

In contrast to single-family homes, new townhouses/condominiums appreciated only slightly faster than resales. The smaller differential corresponds to a smaller price difference between new and existing townhouses/condominiums.

TABLE 7
MEDIAN RATE OF METRO PHOENIX HOME APPRECIATION
By Quarter of Subsequent Sale and New vs. Resale
Percent Change Per Year

		Single-family New	Single-family Resale	Townhouse/Condominium Resale
1981	IV	*	5.5%	*
1982	I	*	4.4	*
	II	*	3.5	*
	III	*	3.9	*
	IV	*	2.8	*
1983	I	6.1	2.4	*
	II	4.2	2.4	*
	III	5.1	2.4	*
	IV	4.4	2.8	*
1984	I	5.0	2.5	*
	II	4.4	2.8	2.4
	III	5.0	2.8	1.4
	IV	5.1	2.4	1.7
1985	I	4.3	2.4	1.7
	II	4.2	2.4	1.5
	III	4.5	2.4	0.6
	IV	4.2	2.0	0.8
1986	I	3.9	2.2	1.2
	II	3.8	2.3	1.0
	III	3.8	2.4	0.2
	IV	3.7	2.0	0.4
1987	I	3.6	2.0	0.0
	II	3.6	2.1	0.0
	III	3.5	2.2	0.1
	IV	3.0	1.8	-0.3
TOTAL		3.9	2.3	0.8

[1] As an example, if a home sold in the fourth quarters of 1981, 1984 and 1987, the rate for 1981-1984 is shown in fourth quarter 1984, and the rate for 1981-1987 is shown in fourth quarter 1987, each in the price range of the second sale.

*Insufficient number of sales. New townhouse/condominiums had an insufficient number for all periods; their 1981-87 appreciation rate was 0.9 percent.

Source: Arizona Real Estate Center, College of Business, Arizona State University.

TABLE 8
MEDIAN RATE OF METRO PHOENIX HOME APPRECIATION
By Quarter of Subsequent Sale, Price Range and New vs. Resale[1]
Percent Change Per Year, Single-family Only

		Resale			New	
		Less Than $60,000	$60,000 to $99,999	$100,000 or more	$60,000 to $99,999	$100,000 or more
1982	III	*	4.3	*	*	*
	IV	1.5	3.1	*	*	*
1983	I	1.4	3.0	*	*	*
	II	0.0	2.9	*	*	*
	III	1.5	2.9	4.6	5.2	*
	IV	1.6	3.1	3.9	4.3	*
1984	I	1.7	2.7	3.2	5.9	*
	II	2.6	2.8	3.4	4.6	*
	III	2.3	2.8	3.5	4.7	*
	IV	1.2	2.4	3.1	4.5	*
1985	I	1.4	2.5	4.5	3.6	*
	II	1.2	2.3	3.8	4.1	7.4
	III	1.6	2.2	4.0	4.2	6.9
	IV	1.0	2.0	2.8	3.6	6.0
1986	I	1.2	2.3	2.9	3.8	5.4
	II	1.9	2.4	2.6	3.6	5.2
	III	1.5	2.5	2.9	3.4	5.8
	IV	1.2	2.0	3.0	3.5	5.2
1987	I	1.5	2.0	2.6	3.4	5.5
	II	1.0	2.3	2.7	3.0	5.5
	III	1.4	2.1	3.0	2.9	5.0
	IV	0.4	2.0	2.7	2.5	5.4
TOTAL		1.5	2.4	3.1	3.6	5.8

[1]As an example, if a home sold in the fourth quarters of 1981, 1984 and 1987, the rate for 1981-1984 is shown in fourth quarter 1984, and the rate for 1981-1987 is shown in fourth quarter 1987, each in the price range of the second sale.

*Insufficient number of sales. Insufficient number in all subcategories prior to third quarter 1982 and all time periods for new homes priced less than $60,000. The 1981-87 appreciation rate for the latter category was 1.84 percent per year.

Source: Arizona Real Estate Center, College of Business, Arizona State University.

By City

Housing appreciation rates vary by city throughout the Valley. While the median rate from 1981-87 for single-family homes in the overall metropolitan area was 2.8 percent, the rate in Valley cities ranged from 2.4 percent to 9.1 percent.

Census tracts from 1980 were combined to form city boundaries; unfortunately, not all tracts coincide exactly with these boundaries. For example, a small portion of Peoria is included in a tract which is primarily Sun City. In some areas where growth has increased dramatically in recent years (such as Gilbert and Chandler), the old tracts may include portions of these areas with bordering cities (such as Mesa).

In many areas of recent growth, an insufficient number of properties have sold more than once during the time under study to produce reliable annual rates. However, the number of sales in many of these areas is large enough to produce an overall 1981-87 rate. Examples of these smaller areas include Fountain Hills, Gilbert, and Paradise Valley; each of these areas appreciated faster than the metro median of 2.8 percent between 1981 and 1987, but the small number of sales reduces the reliability of their annual rates.

Even though appreciation rates varied by city, the range was small. In 1987, rates varied from 2.1 percent to 3.3 percent in all the larger areas except Sun City West, where the rate was 9.0 percent. Chandler, Mesa, Peoria and Scottsdale all had rates somewhat higher than the overall median of 2.4 percent, but only Sun City West's rate was higher than the 4.1 percent rate of inflation.

Most of the deviation in appreciation rates throughout the Valley can be explained by price and the proportion of new homes in the area. The highest rates from 1981-87 occurred in Sun City West, Fountain Hills, Gilbert, and Paradise Valley, all areas with high concentrations of new and/or expensive homes. The lowest rates occurred in Glendale, Phoenix, Sun City and Tempe, areas with lower proportions of new and/or expensive homes.

All of the larger cities followed the pattern of declining rates between 1981 and 1987. Rates were higher than the metro median each year in Chandler, Mesa, Peoria and Sun City West.

TABLE 9
MEDIAN RATE OF METRO PHOENIX HOME APPRECIATION
By City
Percent Change Per Year, Single-family Only

City	1981-83[1]	1984	1985	1986	1987	1981-87[1]
Chandler	4.3	4.6	4.3	3.6	3.3	3.6
Fountain Hills	*	*	*	*	*	6.1
Gilbert	*	*	*	*	*	4.1
Glendale	3.7	3.2	2.4	2.3	2.1	2.4
Mesa	3.6	3.2	3.4	2.8	3.1	3.2
Paradise Valley	*	*	*	*	*	3.9
Peoria	*	4.3	3.3	3.6	2.9	3.3
Phoenix	3.0	2.8	2.4	2.4	2.1	2.4
Scottsdale	3.2	3.2	3.6	2.8	2.9	3.0
Sun City	*	5.7	3.6	2.5	2.1	3.0
Sun City West	*	*	10.5	8.9	9.0	9.1
Tempe	3.3	2.0	2.8	2.6	2.1	2.5
TOTAL, METROPOLITAN PHOENIX	3.4	3.1	2.9	2.6	2.4	2.8

[1]Median percent change for each year within range.

Source: Arizona Real Estate Center, College of Business, Arizona State University.

By Geographic District

District comparison may be used as an alternative to city comparison. The benefit is evident primarily in extremely large cities, such as Phoenix, where various areas within the city may be vastly different. When district designations were originally determined, an attempt was made to group "like" areas to the extent possible, while considering the requirement for a minimum number of resales in each area. Since all parts of Maricopa County are included, the outer districts, such as North Scottsdale and Sun City West, include transactions in the rural areas of the county as well as the primary area covered by the district (see Figure 1).

Between 1981 and 1987, appreciation in most districts was either relatively stable or it declined modestly, similar to the slight deceleration measured Valleywide. The rate was erratic from year to year in several districts, largely the result of few homes reselling.

The 1987 rate ranged between 1.5 percent and 3.9 percent in all districts except Sun City West. For the period from 1981 to 1987, rates varied from 1.7 to 3.7 percent in all areas except Sun City West. While the 1981-87 rate in a number of districts differed significantly from the metro total in a statistical sense, the difference was usually slight in a practical sense (see Table 10).

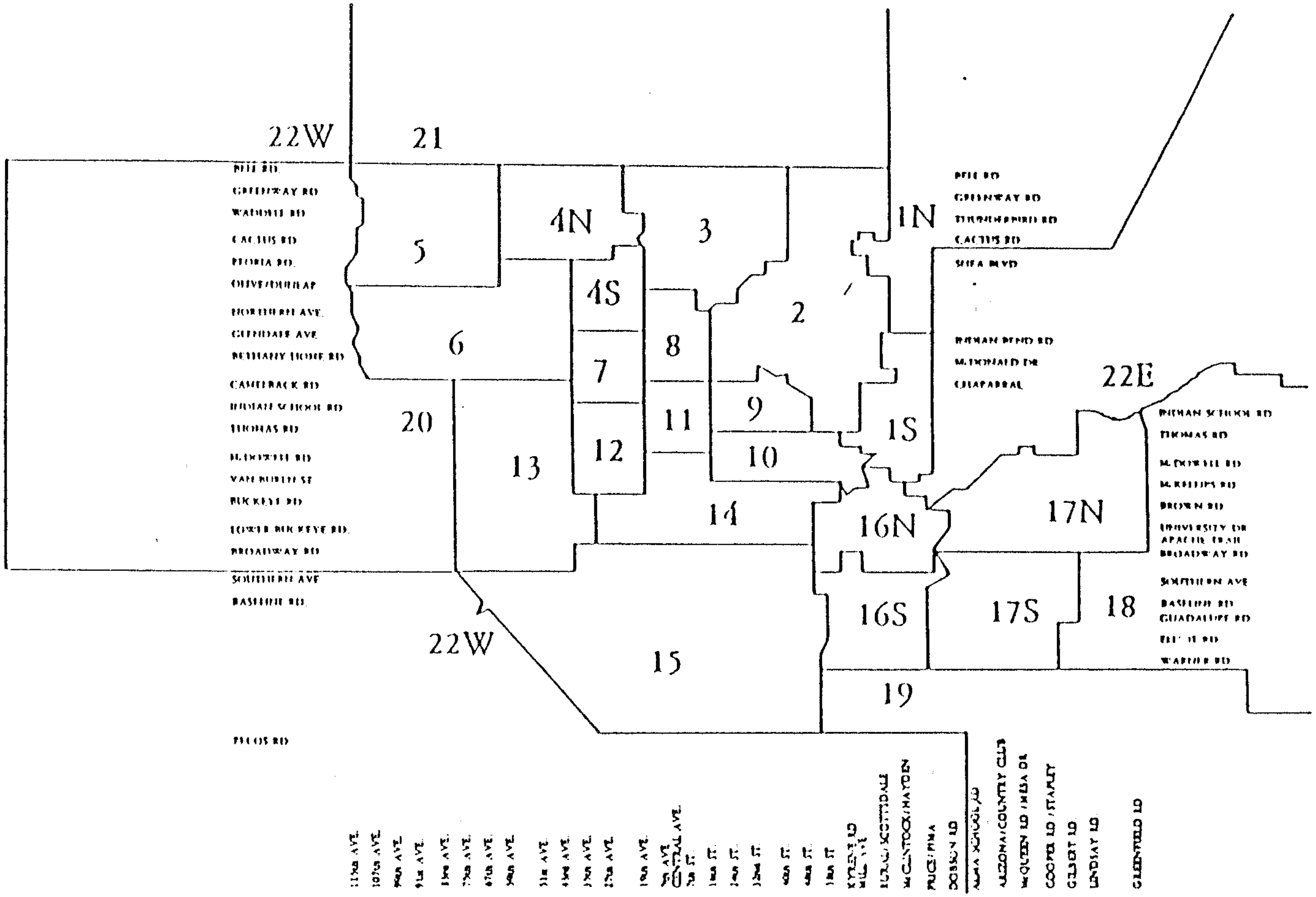
Most of the deviation in district appreciation rates can be explained by price and the proportion of new homes. Higher-priced homes appreciated considerably faster than lower-priced homes in all districts except north Mesa and the retirement community of Sun City (see Table 11). Rates were higher for new homes than for resale homes in all districts (see Table 12).

The highest rates occurred in the newer, more expensive districts of North Scottsdale and Chandler/Gilbert and in the retirement areas of Sun City West and East Mesa. The lowest rates were measured in the older and/or less expensive areas of Phoenix, including Maryvale, Christown and Metrocenter.

Home values appreciated faster than the metro median in the districts of Sun City West, North Scottsdale, East Mesa and Chandler/Gilbert. The most significant downward trends occurred in Sun City and the Western Suburbs. Rates in Sun City fell from the third-highest overall in 1981-83 to slightly greater than the metro median in 1987. The Western Suburbs, which had been fifth-highest, dropped to below the metro median in 1987.

In 1987, home appreciation kept up with the Valley's 4.1 percent rate of inflation only in the district of Sun City West. All other districts recorded appreciation less than inflation.

FIGURE I
PHOENIX METROPOLITAN AREA STATISTICAL DISTRICTS



Note: Districts 1N, 18, 19, 21, 22E and 22W extend to the Maricopa County boundaries.

Source: Phoenix Metropolitan Housing Study Committee

TABLE 10
MEDIAN RATE OF METRO PHOENIX HOME APPRECIATION
By Geographic District
Percent Change Per Year, Single-family Only

District	1981-83[1]	1984	1985	1986	1987	1981-87[1]
1N - North Scottsdale	3.4	3.5	4.6	3.4	3.7	3.7[H]
1S - South Scottsdale	2.6	2.8	2.5	2.4	2.3	2.5
2 - Paradise Valley	5.3	4.2	3.5	2.9	3.2	3.3[H]
3 - North Sunnyslope/Moon Valley	2.9	2.6	2.5	2.5	2.1	2.4[L]
4N - Northwest Phoenix	3.6	3.0	2.2	2.4	2.0	2.4[L]
4S - Metrocenter	1.7	2.3	2.3	1.8	1.8	1.9[L]
5 - Sun City/Youngtown/Peoria	4.9	5.0	3.6	3.6	2.7	3.4[H]
6 - Glendale	3.4	2.6	2.4	2.0	2.0	2.2[L]
7 - Christown	1.9	2.1	2.0	1.9	1.5	1.9[L]
8 - North Central Phoenix	2.5	3.8	4.4	3.0	2.9	3.2
9 - East Camelback	2.6	3.9	3.5	2.6	2.8	3.0
10 - East Central Phoenix	2.2	4.5	2.1	3.4	1.7	2.6
11 - Mid-town Phoenix	1.9	3.0	4.3	3.0	3.9	3.4
12 - West Central Phoenix	2.7	2.6	2.7	2.4	2.6	2.7
13 - Maryvale	2.0	2.0	1.8	1.6	1.3	1.7[L]
14 - Downtown/South Central Phoenix	0.0	3.9	0.7	2.7	3.1	2.6
15 - South Phoenix/Ahwatukee	3.3	4.3	2.9	3.6	2.9	3.4[H]
16N- North Tempe	3.0	0.9	3.0	3.2	2.1	2.8
16S- South Tempe	3.0	2.2	2.7	2.5	2.1	2.4[L]
17N- North Mesa	3.8	2.0	2.5	3.2	2.8	2.9
17S- South Mesa	3.6	3.9	3.6	2.6	2.6	3.0
18 - East Mesa	4.7	3.4	3.7	3.4	3.7	3.6[H]
19 - Chandler/Gilbert	3.4	3.6	4.5	3.6	3.6	3.6[H]
20 - Western Suburbs	4.6	2.2	3.9	2.5	1.5	2.3[L]
21 - Deer Valley	4.0	2.8	2.3	2.3	1.9	2.3[L]
22W- Sun City West/Rural Maricopa Co.	6.3	8.8	9.8	7.0	7.8	8.5[H]
TOTAL, METROPOLITAN PHOENIX	3.4	3.1	2.9	2.6	2.4	2.8

[1] Median percent change for each year within range.

[H] The mean associated with this median is significantly higher than the mean for all of metropolitan Phoenix, tested at the .01 level of statistical significance.

[L] The mean associated with this median is significantly lower than the mean for all of metropolitan Phoenix, tested at the .01 level of statistical significance.

Source: Arizona Real Estate Center, College of Business, Arizona State University. District designations are copyrighted by the Phoenix Metropolitan Housing Study Committee.

TABLE 11
MEDIAN RATE OF METRO PHOENIX HOME APPRECIATION
By Geographic District and Price Range
Percent Change Per Year, 1981-87, Single-family Only

District	Less Than $60,000	$60,000 to $100,000	More Than $100,000
1N - North Scottsdale	*	4.8%	3.6%
1S - South Scottsdale	*	2.4	3.9
2 - Paradise Valley	*	2.7	3.8
3 - North Sunnyslope/Moon Valley	1.2	2.5	3.4
4N - Northwest Phoenix	0.2	2.2	4.8
4S - Metrocenter	1.0	2.1	*
5 - Sun City/Youngtown/Peoria	3.4	3.3	3.9
6 - Glendale	1.5	2.3	3.0
7 - Christown	1.4	2.2	*
8 - North Central Phoenix	*	3.0	3.8
9 - East Camelback	*	3.1	*
10 - East Central Phoenix	2.5	2.8	*
11 - Mid-town Phoenix	1.6	4.2	*
12 - West Central Phoenix	2.6	*	*
13 - Maryvale	1.2	2.9	*
14 - Downtown/South Central Phoenix	2.8	*	*
15 - South Phoenix	3.0	3.4	4.5
16N- North Tempe	*	2.7	*
16S- South Tempe	*	2.3	2.9
17N- North Mesa	2.6	3.2	2.4
17S- South Mesa	2.0	2.8	4.2
18 - East Mesa	2.8	3.6	6.8
19 - Chandler/Gilbert	2.9	3.5	5.4
20 - Western Suburbs	0.6	2.6	*
21 - Deer Valley	1.0	2.5	3.8
22W- Sun City West/Rural Maricopa Co.	*	7.0	10.3
TOTAL, METROPOLITAN PHOENIX	1.6	2.7	4.0

*Insufficient number of sales.

Source: Arizona Real Estate Center, College of Business, Arizona State University. District designations are copyrighted by the Phoenix Metropolitan Housing Study Committee.

TABLE 12
MEDIAN RATE OF METRO PHOENIX HOME APPRECIATION
By Geographic District and New vs. Resale
Percent Change Per Year, 1981-87, Single-family Only

District	New	Resale
1N - North Scottsdale	5.4	2.5
1S - South Scottsdale	*	2.4
2 - Paradise Valley	5.3	2.3
3 - North Sunnyslope/Moon Valley	4.2	2.2
4N - Northwest Phoenix	3.6	1.8
4S - Metrocenter	*	1.9
5 - Sun City/Youngtown/Peoria	3.6	3.2
6 - Glendale	3.7	2.0
7 - Christown	*	1.9
8 - North Central Phoenix	*	3.2
9 - East Camelback	*	3.0
10 - East Central Phoenix	*	2.6
11 - Mid-town Phoenix	*	3.3
12 - West Central Phoenix	*	2.7
13 - Maryvale	2.3	1.6
14 - Downtown/South Central Phoenix	*	2.7
15 - South Phoenix	3.8	3.1
16N- North Tempe	*	2.8
16S- South Tempe	3.1	2.1
17N- North Mesa	4.0	2.8
17S- South Mesa	4.3	2.3
18 - East Mesa	4.2	3.1
19 - Chandler/Gilbert	4.0	3.2
20 - Western Suburbs	3.4	2.1
21 - Deer Valley	2.8	1.6
22W- Sun City West/Rural Maricopa Co.	11.6	4.6
TOTAL, METROPOLITAN PHOENIX	3.9	2.3

*Insufficient number of sales.

Source: Arizona Real Estate Center, College of Business, Arizona State University. District designations are copyrighted by the Phoenix Metropolitan Housing Study Committee.

Comparison of Townhomes to Single-family Homes

The small number of townhouses/condominiums that sold more than once prevented using a geographic division with the same amount of detail as that for single-family homes. Except in the West Valley, where townhouse sales occurred primarily in Sun City West, the appreciation rate for townhouses between 1981-87 was less than that for single-family homes (see Table 13). The geographic pattern was similar for townhomes and single-family homes, with the highest rates in the new and/or more expensive areas and in retirement communities. The lowest rates, including depreciation of townhouses/ condominiums, occurred in the north and west areas of Phoenix.

TABLE 13
COMPARISON OF TOWNHOUSE/CONDOMINIUM TO
SINGLE-FAMILY HOME APPRECIATION
By Combined Geographic District
Median Percent Change Per Year, 1981-87

District		Single-family	Townhouse/ Condominium
1N, 2	- North Scottsdale/Paradise Valley	3.5	1.4
1S	- South Scottsdale	2.5	0.8
3, 8	- North Central Phoenix.	2.6	-0.5
4N, 4S	- Northwest Phoenix.	2.3	-0.2
5	- Sun City/Youngtown/Peoria.	3.4	1.3
6	- Glendale	2.2	0.4
7, 12, 13	- West Phoenix	1.8	-0.5
9, 10, 11 14, 15	- East Central and South Phoenix	3.2	0.6
16N, 16S	- Tempe.	2.5	0.2
17N, 17S 18, 19	- Southeast Valley	3.3	2.3
20, 22W	- West Valley.	4.2	5.0
21	- North Valley	2.3	0.6
TOTAL, METROPOLITAN PHOENIX		2.8	0.9

Source: Arizona Real Estate Center, College of Business, Arizona State University. District designations are copyrighted by the Maricopa County Housing Study Committee.

Comparison of Districts to Metro Area

A discussion of the single-family appreciation rate in each district during 1981-87 follows. Comparisons are made to these metro area proportions: 25 percent of all homes appreciated at least 6.0 percent per year, 54 percent appreciated between zero and 6.0 percent, and 21 percent depreciated. The median overall rate was 2.4 per year in 1987, and 2.8 percent per year from 1981-87.

1N - North Scottsdale - Significantly higher appreciation prevailed, particularly for new homes and mid-priced homes, which appreciated faster than more-expensive homes. The higher rate, which has been generally steady, is related to very few inexpensive homes in the area, as well as a large proportion of new homes. The district had the third-highest proportion (32 percent) of homes with an appreciation rate of at least 6 percent per year in 1987.

1S - South Scottsdale - Average to slightly lower-than-average appreciation in all categories. This district followed the Valleywide pattern of stable-to-slowing appreciation rates.

2 - Paradise Valley - Appreciation was steady at a rate slightly higher than the overall median, after falling from significantly higher-than-average levels in the early 1980s. New homes performed exceptionally well, second only to Sun City West and tied with North Scottsdale. The proportion of homes appreciating at least 6 percent per year dropped to 27 percent in 1987, down from 34 percent during 1981-86.

3 - North Sunnyslope/Moon Valley - Lower-than-average appreciation was measured, though it was near average in a practical sense. The lower rate was particularly noticeable in higher-priced homes. This area had

slightly more homes depreciating, and somewhat fewer homes appreciating more than 6 percent than the entire metro area.

4N - Northwest Phoenix - Lower appreciation was measured, due primarily to subpar rates in the lower price ranges. However, high-priced homes appreciated slightly faster than their metro counterparts. The overall rate has slowed over time.

4S - Metrocenter - This district was one of three with rates less than 2 percent per year from 1981-87; the low rate was related to significantly lower sales prices and to few new properties. This area had the second smallest proportion of homes appreciating at least 6 percent per year.

5 - Sun City/Youngtown/Peoria - Low-priced homes had higher rates than any other district, and resale homes appreciated faster than average. However, appreciation in this area has been falling since 1984. Only Sun City West's rate was higher from 1981-86, but the district fell to 12th place in 1987, just slightly above the metro median. This drop brought the area's 1981-87 rate down to a three-way tie for fifth place, still higher than the Valley median. The proportion of homes with high appreciation has decreased significantly, while the proportion depreciating has been rising.

6 - Glendale - Steady slowing has dropped appreciation in this district to below norm. Sales prices in the area are slightly lower than the metro median, but the appreciation rate was significantly lower than the median only on high-priced homes. In 1987, only 15 percent of the homes in this area appreciated more than 6 percent per year, down from 24 percent in 1981-86.

7 - Christown - This district was tied for the second lowest appreciation rate from 1981-87, though the rate remained steady until 1987. The area

has few new or expensive homes, contributing to its low overall rate. Inexpensive homes and resale homes appreciated only slightly slower than the metro area. Considerably more homes depreciated than appreciated at least 6 percent between 1981 and 1987.

8 - North Central Phoenix - Slightly higher appreciation was measured, related to significantly higher sales prices. The area had very few new or inexpensive homes, and had the fourth highest proportion of homes appreciating at least 6 percent in 1987. During 1981-87, 30 percent of the homes in this area appreciated 6 percent or more.

9 - East Camelback - Slightly higher appreciation was experienced, although the proportion of homes appreciating at least 6 percent per year fell slightly. The higher-than-average rates are more impressive after considering the almost entirely mid-priced, resale composition of the area.

10 - East Central Phoenix - The small number of sales in this district resulted in erratic year-to-year rates, but the rate from 1981-87 was average. Lower-priced homes in this area did relatively well.

11 - Mid-town Phoenix - Greater-than-average appreciation was measured, due to higher rates in the middle price range. Over 34 percent of the homes appreciated at least 6 percent during 1981-87, third highest of all districts. Conversions from residential to commercial land use probably affects the appreciation measure.

12 - West Central Phoenix - Steady, average appreciation prevailed, despite significantly lower prices. This area consists almost solely of low-priced resale homes. This district had a relatively high proportion of homes with depreciation or high appreciation.

13 - Maryvale - This district had the lowest appreciation rate in 1987 and from 1981-87, as well as the highest proportion (30 percent) of depreciating properties. The low rate related to significantly lower sales prices, as well as the fact that this district had the lowest rate for new homes.

14 - Downtown/South Central Phoenix - The small size of the database precludes most conclusions. The rate was erratic, but the overall rate from 1981-87 approximated the median level. The area consists of lower-priced resale homes, but the inexpensive homes appreciated faster than the low-priced median, resulting in the average overall rate.

15 - South Phoenix/Ahwatukee - Homes in this district enjoyed significantly higher appreciation, especially lower-priced homes and resale homes. More than one-third of the homes appreciated at least 6 percent per year, fourth highest in the Valley.

16N- North Tempe - This district had average appreciation between 1981-87, although rates were erratic year-to-year. The area is dominated by mid-priced resale homes, which appreciated at the median rate.

16S- South Tempe - This district is an anomaly of significantly lower appreciation in all categories. The area has few low-priced homes and mostly resale homes. Low rates resulted from the lowest proportion (17 percent) of homes appreciating 6 percent or more per year, even though a lower-than-average proportion of homes depreciated.

17N- North Mesa - Average appreciation was measured overall, though low-priced homes had higher-than-average rates while higher-priced homes appreciated more slowly than the Valley median.

17S- South Mesa - Overall rates in this district were slightly higher than the metro median, due to fewer homes suffering depreciation. Low-priced homes and new homes appreciated slightly faster than the metro median.

18 - East Mesa - Appreciation was significantly higher in this district (tied for third from 1981-87). All price ranges, as well as resale homes, appreciated faster than the norm. A large proportion of homes appreciated at least 6 percent per year, with an offsetting lower proportion that depreciated. The higher rate, which has been nearly steady since 1984, particularly affected the higher price ranges. Retirement villages in this district probably create a positive impact on appreciation.

19 - Chandler/Gilbert - Nearly steady, significantly higher appreciation was measured overall, as well as in all price ranges and in resale homes. This district had a relatively high proportion of homes appreciating at least 6 percent per year, and a corresponding low proportion of properties depreciating.

20 - Western Suburbs - This district had low overall appreciation rates, due primarily to the drop in 1987. Low-priced homes appreciated only 0.4 percent per year from 1981-87, and the area has few high-priced homes. This district had the second-highest proportion (32 percent) of homes depreciating in 1987.

21 - Deer Valley - Lower prices led to significantly lower appreciation, for both new and resale homes. Only 18 percent of the homes appreciated at least 6 percent per year from 1981-87; the average proportion depreciated.

22W- Sun City West/Rural Maricopa County - Homes in this district enjoyed more than double the appreciation rate of the next-highest district, and triple the overall median. Nearly all sales in the district are in Sun City West, which has significantly higher sales prices and a large proportion of new homes. Only 9 percent of the homes depreciated, while 63 percent appreciated at least 6 percent per year. This is the only district where the appreciation rate between 1981 and 1987 surpassed the metropolitan Phoenix inflation rate.